



Materials Engineering Branch

TIP*



No. 006 Flexible Foam Contamination

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Flexible polyurethane foams have been used for packaging sensitive hardware, for shock dampening, for RF shielding and other applications. Due to an increased awareness and demand for safety of materials, a considerable amount of fire retardant is ordinarily added to such foams at the time of production. The fire retardant materials are usually not chemically bound in the foam and are volatile under vacuum test and flight conditions.

This additive can even pose a serious problem at normal pressures if the foam is used for packaging because, in addition to being volatile, it can be transferred to a surface by physical contact. Therefore, if the foam needs to be used for packaging or as some integral part of an experiment, it must be thoroughly washed with analytical grade (or better) ethyl or isopropyl alcohol approximately three times or until no additional fire retardant is detected in the wash solution.

If it is to be used for flight hardware, the foam should be baked out for a few hours in thermal vacuum at about 75°C before integration. If at all possible, flight hardware should be bagged to avoid direct contact with the foam.